

**1998**

**INTERMEDIATE**

**MATHEMATICS**

**SCORING GUIDES**

**SESSION 1**

**MISSOURI ASSESSMENT PROGRAM  
MATHEMATICS SPRING 1998  
SCORING GUIDE  
GRADE 8**

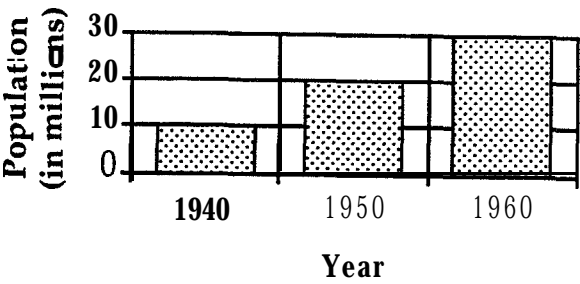
1. Students should **not** be penalized for omitting the following:
  - degree symbols
  - dollar signs (\$) or cent signs (¢)
  - zeros for place holders; for example, either 0.75 or **.750** could be used
  - labels for word problems; for example, “miles”
2. Students should **not** be penalized for:
  - spelling or grammar errors
  - using abbreviations; for example, ft or feet could be used
  - adding extra answer(s) as long as the answer(s) are correct and indicated as answer(s); however, if the extra answer(s) are incorrect, one point will be deducted.
3. Students should be given credit for:
  - answers not written on answer line; for example, answer could be given in work space or in explanation
4. Graphs
  - The order in which the data in bar and circle graphs are graphed is NOT important.
  - Line graphs are acceptable with or without lines connecting the points.
  - Any width of a bar in a bar graph is acceptable.
  - Students should be given full credit for graphing extra data point(s) as long as the point(s) are reasonable.
  - Students should **not** be penalized for compressing the interval between 0 and the first increment as long as the other intervals are consistent.
  - Bar graphs can be horizontal or vertical; however, bars must originate at the axis representing the independent variable. (See attached.)

Condition Codes:

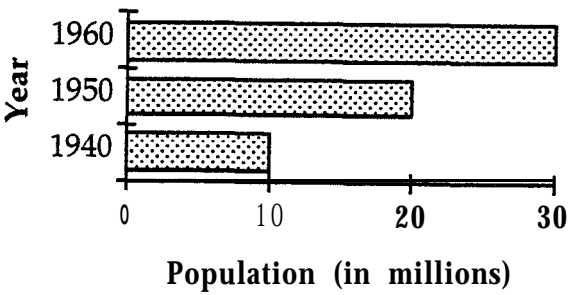
- A. No response/refusal
- B. Insufficient work to score
- C. Off task
- D. Illegible
- E. Predominantly in another language

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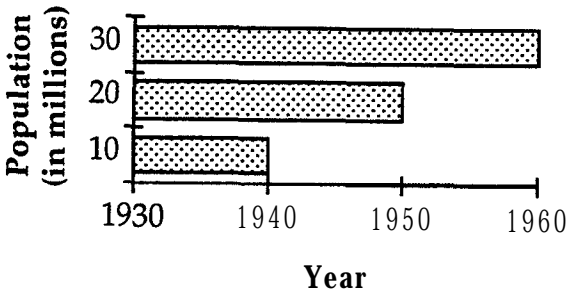
CORRECT



CORRECT



INCORRECT



**MISSOURI ASSESSMENT PROGRAM  
MATHEMATICS SPRING 1998  
SHOW-ME STANDARDS**

**Goal 1**

**Students in Missouri public schools will acquire the knowledge and skills to gather, analyze, and apply information and ideas.**

***Students will demonstrate within and integrate across all content areas the ability to***

1. develop questions and ideas to initiate and refine research
2. conduct research to answer questions and evaluate information and ideas
3. design and conduct field and laboratory investigations to study nature and society
4. use technological tools and other resources to locate, select, and organize information
5. comprehend and evaluate written, visual, and oral presentations and works
6. discover and evaluate patterns and relationships in information, ideas, and structures
7. evaluate the accuracy of information and the reliability of its sources
8. organize data, information, and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation
9. identify, analyze, and compare the institutions, traditions, and art forms of past and present societies
10. apply acquired information, ideas, and skills to different contexts as students, workers, citizens, and consumers

**Goal 2**

**Students in Missouri public schools will acquire the knowledge and skills to communicate effectively within and beyond the classroom.**

***Students will demonstrate within and integrate across all content areas the ability to***

1. plan and make written, oral, and visual presentations for a variety of purposes and audiences
2. review and revise communications to improve accuracy and clarity
3. exchange information, questions, and ideas while recognizing the perspectives of others
4. present perceptions and ideas regarding works of the arts, humanities, and sciences
5. perform or produce works in the fine and practical areas
6. apply communication techniques to the job search and to the workplace
7. use technological tools to exchange information and ideas

**MISSOURI ASSESSMENT PROGRAM  
MATHEMATICS SPRING 1998  
SHOW-ME STANDARDS**

### **Goal 3**

**Students in Missouri public schools will acquire the knowledge and skills to recognize and solve problems.**

***Students will demonstrate within and integrate across all content areas the ability to***

1. identify problems and define their scope and elements
2. develop and apply strategies based on ways others have prevented or solved problems
3. develop and apply strategies based on one's own experience in preventing or solving problems
4. evaluate the processes used in recognizing and solving problems
5. reason inductively from a set of specific facts and deductively from general premises
6. examine problems and proposed solutions from multiple perspectives
7. evaluate the extent to which a strategy addresses the problem
8. assess costs, benefits, and other consequences of proposed solutions

### **Goal 4**

**Students in Missouri public schools will acquire the knowledge and skills to make decisions and act as responsible members of society.**

***Students will demonstrate within and integrate across all content areas the ability to***

1. explain reasoning and identify information used to support decisions
2. understand and apply the rights and responsibilities of citizenship in Missouri and the United States
3. analyze the duties and responsibilities of individuals in societies
4. recognize and practice honesty and integrity in academic work and in the workplace
5. develop, monitor, and revise plans of action to meet deadlines and accomplish goals
6. identify tasks that require a coordinated effort and work with others to complete those tasks
7. identify and apply practices that preserve and enhance the safety and health of self and others
8. explore, prepare for, and seek educational and job opportunities

**Session:** 1  
**Item:** 1  
**Page:** 3  
**Content Standard(s):** 4 Patterns and Relationships  
**Process Standard(s):** 1.10

**Exemplary Response:**

- (\$) **20.90**

AND

- $5n + 5.23 = 109.73$   
 $5n = 109.73 - 5.23$   
 $n = 104.50 \div 5$

OR

Other valid process

**Score Points:**

2 points	Exemplary Response
1 point	Correct process; error in computation
	OR
	Correct answer
0 points	Other

**Scoring Comments:**

Accept \$21.95 as answer if student solves equation for \$20.90, and adds tax of \$1.05, with work shown.

Session: 1  
Item: 2  
Page: 4  
Content Standard(s): 1 Number Sense  
Process Standard(s): 1.10

**Exemplary Response:**

- $16\frac{1}{8}$  or 16.125 (yards)

AND

- $3\frac{5}{8} + 1\frac{3}{4} = \frac{29}{8} + \frac{14}{8} = \frac{43}{8}$   
 $\frac{43}{8} \times 3 = \frac{129}{8}$   
 $129 \div 8 = 16 \text{ r } 1$

OR

Other valid process

**Score Points:**

2 points	Exemplary Response
1 point	Correct process, error in computation
	OR
	Correct answer
0 points	Other

**Session:** 1

**Item:** 3

**Page:** 5

**Content Standard(s):** 3 Data Analysis, Probability, and Statistics

**Process Standard(s):** 1.10

**Exemplary Response:**

- 133 (adults)

AND

- $120 + 136 + 126 + 150 = 532$   
 $532 \div 4$

OR

Other valid process

**Score Points:**

2 points Exemplary Response

1 point Correct process, error in computation

OR

Correct answer

OR

Finds student mean (average) attendance (95); shows process

OR

Finds total (student and adult) mean (average) attendance (114); shows process

0 points Other

**Scoring Comments:**

Student must show all parts of process to receive full credit.



**Session:** 1

**Item:** 4

**Page:** 7

**Content Standard(s):** 5 Mathematical Systems and Number Theory

**Process Standard(s):** 1.5

**Exemplary Response:**

- (Grade) 7

AND

- Grade 6  $11.7 + 14.75 + 12.8 = 39.25$   
Grade 7  $12.1 + 13.2 + 14 = 39.3$   
Grade 8  $8.3 + 17.4 + 13.5 = 39.2$

OR

Other valid process

**Score Points:**

2 points Exemplary Response

1 point Correct process; error in computation; error in comparing decimals

OR

Correct answer

0 points Other

**Session:** 1  
**Item:** 5  
**Page:** 7  
**Content Standard(s):** 1 Number Sense  
**Process Standard(s):** 3.3

**Exemplary Response:**

- Procedure could be to compute the mean (average) of all the grades for the three weeks and then multiply this mean (average) by 10 weeks.

OR

- Procedure could be to add up all the pounds of aluminum cans for all the grades for three weeks, divide by the number of numbers added (**9**), and then multiply by 10 weeks.

OR

Other valid procedure

Note: Can also show procedure by numeric process.

**Score Points:**

1 point	Exemplary Response
0 points	Other

**Session:** 1  
**Item:** 6  
**Page:** 8  
**Content Standard(s):** 1 Number Sense  
**Process Standard(s):** 3.1

**Exemplary Response:**

- 875

AND

- $175 \times 5$

OR

Other valid process

**Score Points:**

2 points	Exemplary Response
1 point	Correct process; error in computation
	OR
	Correct answer
0 points	Other

**Session:** 1  
**Item:** 7  
**Page:** 9  
**Content Standard(s):** 1 Number Sense  
**Process Standard(s):** 3.8

**Exemplary Response:**

- (Each person should buy) 1 one-day pass and 1 three-day pass  
OR
- (The family should buy) 4 one-day passes and 4 three-day passes

AND

- $4 \times 27.95 = (\$)$  111.80 (4 one-day passes)  
 $80.95 + 27.95 = (\$)$  108.90 (a three-day pass and a one-day pass)

OR

Other valid process

**Score Points:**

2 points Exemplary Response

1 point Correct process; error in computation

OR

Correct answer

OR

Gives a pass combination that would work for 4 days but is not the cheapest (only for 4 one-day passes)

0 points Other

**Scoring Comments:**

Students must show a comparison.

**Session:** 1  
**Item:** 8  
**Page:** 10  
**Content Standard(s):** 3 Data Analysis, Probability, and Statistics  
**Process Standard(s):** 3.5

**Exemplary Response:**

- Accept any answer in the range of \$33 – \$40

**AND**

- Explanation consistent with student work and equivalent to one of the following:

The increases over the ten years average \$1.70 every two years. This would indicate an increase of \$8.50 ( $5 \times \$1.70$ ) between 1995 and 2005. This would bring the cost to a total of \$35.00 in 2005 ( $\$8.50 + \$26.50$ ).

OR

The median increase is \$1.50 every two years. I would multiply this by 5 because it is a ten-year projection. This would give me \$7.50; this added to \$26.50 would mean the cost would be \$34.00.

OR

Other valid explanation

**Score Points:**

2 points Exemplary Response

1 point Correct prediction with no explanation

OR

Partial explanation that discusses the trends observed but draws no conclusion

0 points Other

**Scoring Comments:**

Other valid explanations include:

Average \$2 per 2 years or  $\$10 + \$26.50 = \$36.50$ .

**Session:** 1  
**Item:** 9  
**Page:** 11  
**Content Standard(s):** 6 Discrete Mathematics  
**Process Standard(s):** 1.6

**Exemplary Response:**

- 15 (combinations)

AND

- $3 \times 5$

OR

Other valid method of finding all the combinations

**Score Points:**

2 points	Exemplary Response
1 point	Correct process; error in computation
	OR
	Correct answer
0 points	Other

**Scoring Comments:**

Students may show combinations.

<b>Session:</b>	1
<b>Item:</b>	10
<b>Page:</b>	13-15
<b>Content Standard(s):</b>	3 Data Analysis, Probability, and Statistics
<b>Process Standard(s):</b>	3.5

**Score Points:**

4 points	<p>The student's response fully addresses the performance event.</p> <p>The response:</p> <ul style="list-style-type: none"><li>• demonstrates knowledge of the mathematical concepts and principles needed to complete the event.</li><li>• communicates all process components that lead to an appropriate and systematic solution.</li><li>• may have only minor flaws with no effect on the reasonableness of the solution.</li></ul>
3 points	<p>The student's response substantially addresses the performance event.</p> <p>The response:</p> <ul style="list-style-type: none"><li>• demonstrates knowledge of the mathematical concepts and principles needed to complete the event.</li><li>• communicates most process components that lead to an appropriate and systematic solution.</li><li>• may have only minor flaws with minimal effect on the reasonableness of the solution.</li></ul>
2 points	<p>The student's response partially addresses the performance event.</p> <p>The response:</p> <ul style="list-style-type: none"><li>• demonstrates a limited knowledge of the <b>mathematical</b> concepts and principles needed <b>to</b> complete the event.</li><li>• communicates some process components that lead to an appropriate and systematic solution.</li><li>• may have flaws or extraneous information that indicates some lack of understanding or confusion.</li></ul>

**Session:** 1  
**Item:** 10  
**Page:** 13–15  
**Content Standard(s):** 3 Data Analysis, Probability, and Statistics  
**Process Standard(s):** 3.5

**1 point**      **The** student's response minimally addresses the performance event.

The response:

- demonstrates a limited knowledge of the mathematical concepts and principles needed to complete the event.
- communicates few or no process components that lead to an appropriate and systematic solution.
- may have flaws or extraneous information that indicates lack of understanding or confusion.

**0 points**      Other-Responses not addressed by the Condition Codes:

Examples of "0":

Work consists of copying the prompt information only.

Work indicates no mathematical understanding of the task.



**Session:** 1

**Item:** 10

**Page:** 13-15

**Content Standard(s):** 3 Data Analysis, Probability, and Statistics

**Process Standard(s):** 3.5

**Sample Solution:**

Name of Fish/Plant	Number Purchased	Cost per Item (in dollars)	Total Cost (in dollars)	Length of Fish (in inches)	Total Length (in inches)
Elodea	2	0.75	1.50		
Fan Plant	1	1.95	1.95		
Wisteria	2	2.95	5.90		
Sword Plant	2	5.95	11.90		
Angelfish	2	8.95	17.90	3	6
Catfish	1	1.95	1.95	1	1
Clown Barb	2	1.45	2.90	1.25	2.5
Clown Loach	1	5.95	5.95	3	3
Gourami	2	3.95	7.90	2.5	5
Mollie	2	2.45	4.90	1.5	3
Platy	2	0.95	1.90	1.5	3
Neon Tetra	4	1.25	5.00	0.75	3
Guppy	8	0.35	2.80	1	8
Totals			72.45		34.5

OR

Other valid table that shows the following:

- The total cost is between \$65 and \$75.
- The total length of the fish when combined is less than or equal to 35 inches.
- The number of plants purchased must be at least 2 and the total number of plants should not exceed 10.
- The number of kinds of fish purchased must be at least 5.

Note: Accept totals that are not included in the table.